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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/137,393	08/20/1998	PIJUSH K. DEWANJEE	DSCK-525-C3	2824
7590 03/15/2004			EXAMINER	
ANTHONY M LORUSSO LORUSSO & LOUD 440 COMMERCIAL STREET BOSTON, MA 02109			SERGENT, RABON A	
			ART UNIT	PAPER NUMBER
			1711	

DATE MAILED: 03/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/137,393	DEWANJEE ET AL. 	
	<b>Examiner</b>	<b>Art Unit</b>	
	Rabon Sergent	1711	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 30-33,36-41 and 43-57 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 30-33,36-41 and 43-57 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 16, 2003 has been entered.

2. The disclosure is objected to because of the following informalities: Applicants' reference to the parent applications is improper. Applicants' language at lines 3-10 of page 1 of the specification fails to properly specify by serial number which prior applications the current application is a continuation-in-part of. The "claim of benefit" language does not clarify which applications are being referred to within the next sentence.

Appropriate correction is required.

3. Claims 30-33 and 36-39 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicants have failed to define the language, "essentially free of catalysts"; it cannot be determined how "essentially free" is to be interpreted, in that it is unclear what level of catalyst may be present and still satisfy the "essentially free" language.

4. Claims 30-33 and 36-39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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The language, "essentially free of catalysts", renders the claims indefinite, because it is unclear how "essentially" further modifies "free". It cannot be determined what level of catalyst the language permits.

5. Claims 30-33, 36-39, 43, and 54 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Firstly, support has not been provided for the language, "about 5.5% to about 8.0%"; the specification provides support only for the range, 5.5% to 8.0%.

Secondly, support has not been provided for stating that the diisocyanate and polyol when mixed have the claimed NCO% content. The NCO% content is only realized for the prepolymer resulting from the reaction of the diisocyanate and polyol.

6. Claims 30-33 and 36-39 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The recitation of the "stoichiometry of 92 to 105%" has not been adequately enabled, because the basis for the stoichiometry has not been provided. For example, if the percent values are based on the 100% basis of isocyanate reactive group, then a different product will be encompassed by a range that is based on 100% isocyanate.

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7. Claims 30-33, 36-39, and 54 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicants have failed to define the terms, “single molding operation” and “single molding operation cycle”; it cannot be determined exactly what is meant by the language or what procedure is encompassed by the terminology.

8. Claims 37 and 38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Firstly, it is unclear if the “having an initial compression ...” language pertains to the thread windings, center, or core.

Secondly, it cannot be determined what difference is encompassed by the “about the same” language. By what quantity may the values differ and still satisfy the “about the same” language?

9. Claims 40 and 41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The use of “can be” renders the claims indefinite, because it is unclear if or to what extent the language denoted by “can be” is optional.

10. Claim 43 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described

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in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. It cannot be clearly determined exactly what is meant by or encompassed by the language, “a polyurethane golf ball molding assembly”. The language has not been defined within the specification.

11. Claims 44-47 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. It cannot be clearly determined exactly what is meant by or encompassed by the language, “a cast polyurethane golf ball molding system”. The language has not been defined within the specification. Furthermore, due to the lack of definition, it is unclear if the claim pertains to a process, article, or apparatus.

12. Claims 43-47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Firstly, the claims are indefinite, because it cannot be determined what is encompassed by the claimed “assembly” and “system” language. It cannot be determined what weight should be given to the terms, “assembly” and “system”.

Secondly, claims 45-47 are improperly drawn to a golf ball, rather than a cast polyurethane golf ball molding system.

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13. Claim 53 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The use of the term, “-based”, within polyurethane-based liquid, renders the claim indefinite, because it is unclear to what extent the liquid is derived from polyurethane and it is unclear if “-based” causes the language to differ from a polyurethane, *per se*.

14. Claim 54 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Support has not been provided for stating that the cover has a flexural modulus of about 15,000 PSI to about 30,000 PSI. Firstly, support is lacking for the use of “about”. Secondly, the language at page 30 of the specification does not state that the composition possess the claimed flexural modulus range. The specification merely states that the composition exhibited a flexural modulus that falls within a desired range of 15,000 – 30,000 PSI. To state that the range is desired does not provide support that the composition possesses the desired range.

15. Claims 30, 32, 33, 36-39, 43, 48-50, and 53-58 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the production of golf ball covers using toluene diisocyanate, 4,4'-diphenylmethane diisocyanate, isophorone diisocyanate, or mixtures thereof, does not reasonably provide enablement for the production of golf ball covers using virtually any polyisocyanate, including any benzene ring containing polyisocyanate. The specification does not enable any person skilled in the art to which it pertains, or with which it is

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most nearly connected, to make the invention commensurate in scope with these claims. Aside from the aforementioned polyisocyanates, applicants have provided no guidance for the selection of other suitable polyisocyanates that will yield cast polyurethanes having suitable physical properties for use as golf ball covers. Applicants' argument that examples of toluene diisocyanate and 4,4'-diphenylmethane diisocyanate provide adequate support to make the claimed invention in no way addresses the issue that adequate enablement has not been provided for the use of other polyisocyanates, especially when catalysts are not used.

16. Claims 30-33, 36-39, 44-46, and 48-58 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the production of golf ball covers using a mixture of diethyl-2,4-toluenediamine and dimethylthio-2,4-toluenediamine, as curing agents, does not reasonably provide enablement for the production of golf ball covers using virtually any diamine curing agent, including blends of differently reacting diamines. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims. The specification is devoid of guidance that would enable one to select suitable diamine curing agents, other than the disclosed blends of diethyl-2,4-toluenediamine and dimethylthio-2,4-toluenediamine, that will yield suitable golf ball covers, especially covers produced in the absence of a catalyst, having viable processing characteristics and suitable golf ball properties. The only practical guidance provided by applicants stems from page 11 of the specification, wherein applicants state that the curing agents of the present invention are substantially Ethacure 300 and Ethacure 100.

Applicants' argument that the structural language narrows the claims to a small and easily



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defined group is entirely without merit and amounts to unsubstantiated opinion, especially in the case of claims 55-58, which do not require the use of any hindered amine.

17. Claims 30, 31, 33, 36-40, 43-51, and 53-58 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the production of golf ball covers using polyoxytetramethylene polyol, does not reasonably provide enablement for the production of golf ball covers using virtually any polyol. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims. Applicants have failed to provide adequate teaching to permit one of ordinary skill in the art to produce viable golf ball covers using polyols other than the aforementioned polyoxytetramethylene polyol. The only guidance that applicants provide concerning the use of other polyols is a statement at page 14 that states that “unlike urethane elastomers made with other ether polyols, e.g., polypropylene ether glycol, urethane elastomers made with PTMEG exhibit superior dynamic properties such as coefficient of restitution and Bashore rebound”. Applicants further state that the polyol used in accordance with the present invention corresponds to a polyoxytetramethylene polyol. These statements in no way provide guidance for the use of other polyols. Applicants’ response that the claims have been broadened to claim all polyols is completely nonresponsive to the issue set forth by the examiner.

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

19. Claims 30-33, 36-41, 43-52, and 54-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. ('852) or GB 2301291, each in view of Wu ('673) and Isaac ('568) and Presswood ('298).

The primary references disclose the production of thread wound-solid center golf balls, wherein the winding and center are comprised of components which are equivalent to those claimed by applicants. See columns 2-5 and tables within Kato et al. See pages 7-9 and examples within GB 2301291.

20. While the primary references are largely silent regarding the use of polyurethane covers, the use of such covers utilizing applicants' claimed prepolymer and blends of curing agents having different reactivities was known at the time of invention. Wu discloses the use of prepolymers based on diisocyanates and polytetramethylene ether glycol and a slow reacting polyamine, such as 3,5-dimethylthio toluene diamine. See column 2. Isaac discloses the production of golf balls having polyurethane covers, wherein the polymerization cycle is interrupted through the use of blends of curing agents having different reactivities, so as to permit a center to be introduced into a semi-cured golf ball cover half which is then mated with

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the other half and cured. See abstract and columns 2 and 3. Furthermore, the claimed hardness values and flexural modulus are considered to be inherent features of the polyurethane covers of these references, since it is logical to conclude that viable covers would have to possess comparable ranges of these properties in order to perform acceptably.

21. Though Isaac fails to disclose applicants' blend of fast and slow curing reacting diamines, the use of blends of diethyl toluene diamine with 3,5-dimethylthio toluene diamine to produce polyurethane molding compositions having controlled reaction profiles and improved properties was known at the time of invention. This position is supported by the teachings of Presswood at columns 2-4. Presswood further discloses the relative reactivities of the specified chain extenders.

22. Therefore, since it was known to employ blends of curing agents having different reactivities for the production of polyurethane golf ball covers and since it was known to employ diamines of the nature claimed by applicants to cure moldable prepolymers analogous to those claimed, it would have been obvious to one of ordinary skill in the art to utilize the curing agent blend of Presswood with the prepolymer of Wu in accordance with the teachings of Isaac, so as to obtain a golf ball cover composition suitable for use with the wound cores of the primary references.

23. Claim 53 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. ('852) or GB 2301291, each in view of Wu ('673) and Isaac ('568) and Presswood ('298) as applied to claims 30-33, 36-41, 43-52, and 54-58 above, and further in view of Ford et al. ('280).

As aforementioned, the combined teachings of Kato et al. or GB 2301291 and Wu, Isaac, and Presswood are considered to render applicants' golf ball cover obvious; however, these

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references are silent with respect to the step of precoating the core with polyurethane prior to introducing the core into the mold. Still, Ford et al. disclose at column 2, lines 59-70 the precoating of golf ball cores with polyurethane prepolymer to assist in locating the cores within the mold. Therefore, it would have been obvious to one of ordinary skill in the art to precoat the core of the primary references for the same reason.

Any inquiry concerning this communication should be directed to R. Sergent at telephone number (571) 272-1079.

R. Sergent  
March 8, 2003

  
RABON SERGENT  
PRIMARY EXAMINER